

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2001/0026268 A1**
Ito (43) **Pub. Date: Oct. 4, 2001**(54) **COORDIANTE INPUT AND DETECTION
DEVICE AND INFORMATION DISPLAY AND
INPUT APPARATUS****Publication Classification**(51) **Int. Cl.⁷** **G09G 5/00**
(52) **U.S. Cl.** **345/175; 345/173**(75) **Inventor: Takahiro Ito, Aichi (JP)****Correspondence Address:****OBLON SPIVAK MCCLELLAND MAIER &
NEUSTADT PC
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202 (US)**(73) **Assignee: RICOH COMPANY, LTD., Tokyo (JP)**(21) **Appl. No.: 09/813,991**(22) **Filed: Mar. 22, 2001**(30) **Foreign Application Priority Data**

Mar. 31, 2000 (JP) 2000-096991

(57) **ABSTRACT**

A coordinate input and detection device includes a touch panel, light emitting units, a reflective member, intensity distribution detection units, a coordinate detection unit, and filters. Each of light beams projected from the light emitting units travels and has a sector shape in a direction parallel to a surface of the touch panel. The light beams are reflected by the reflective member and received by the intensity distribution detection units. A coordinate detection unit detects a coordinate value of a position where the light beams are interrupted based on intensity distributions detected by the intensity distribution detection units. The filters are disposed in optical paths in directions perpendicular to directions in which the light beams travel, and have transmission rates varying with respect to positions within the filters.

